

**IN THE CLAIMS**

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1. (canceled)

2. (currently amended) ~~The apparatus recited in claim 1~~ An apparatus defining a node, the apparatus comprising:

an optical switch for routing optical signals, the optical switch including ports;

a light source;

a light detector;

a control circuit connected to the optical switch; and

wherein the control circuit ~~comprises~~ having node identification.

3. (original) The apparatus recited in claim 2 wherein the control circuit causes the light source to send the node identification via a port of the optical switch.

4. (original) The apparatus recited in claim 2 wherein each port of the node is identified with a port identification.

5. (currently amended) The apparatus recited in claim 1 2 wherein the light source is connected to a first port of the optical switch for sending optical signal to identify the optical node.

6. (currently amended) ~~The apparatus recited in claim 2~~ An apparatus defining a node, the apparatus comprising:

an optical switch for routing optical signals, the optical switch including ports;

a light source connected to a first port of the optical switch adapted to send optical signal to identify the optical node;

a light detector;

a control circuit connected to the optical switch; and

wherein the light detector is connected to a second port of the optical switch for detecting optical signals identifying another optical node.

7. (currently amended) The apparatus recited in claim 4 6 wherein the control circuit determines connection information of a the second port of the optical switch by detecting node identification from another apparatus.

8. (original) The apparatus recited in claim 6 wherein the control circuit updates a path router with the connection information.

9. (currently amended) The apparatus recited in claim 4 6 wherein the control circuit is connected to a path router that provides the node with node identification.

10. (canceled).

11. (currently amended) ~~The network recited in claim 10~~ An optical network comprising:  
a plurality of optical nodes, each node having ports, a first node comprising  
an optical switch for routing optical signals, the optical switch including  
ports;  
a light source;  
a light detector;  
a control circuit connected to the optical switch wherein the control circuit  
having comprises a first node identification; and  
the optical nodes interconnected via the ports.

12. (currently amended) The network recited in claim 10 11 wherein the light source of the first optical node is connected to a first port of the optical switch for sending identification signal to identify the first optical node.

13. (currently amended) ~~The network recited in claim 12~~ An optical network comprising:  
a plurality of optical nodes, each node having ports, a first optical node comprising  
an optical switch for routing optical signals, the optical switch including  
ports;

a light source connected to a first port of the optical switch for sending identification signal to identify the first optical node;

a light detector, wherein the light detector is connected to a second port of the first optical switch for detecting optical signals identifying another optical node;

a control circuit connected to the first optical switch; and  
the optical nodes interconnected via the ports.

14. (currently amended) The network recited in claim ~~12~~ 13 wherein the control circuit causes the light source to send the first node identification via a port of the optical switch.

15. (currently amended) The network recited in claim ~~12~~ 13 wherein the control circuit determines connection information of a second port of the optical switch by detecting, via the light detector, a second node identification from a second optical node.

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16. (original) The network recited in claim 15 wherein the control circuit updates a path router with the connection information.

17. (currently amended) The network recited in claim ~~14~~ 13 further comprising a path router having a table of connections, the table including connection information.

18. (currently amended) The network recited in claim ~~14~~ 13 further comprising a path router wherein the path router polls the first node for connection information.

19. (currently amended) The network recited in claim ~~14~~ 13 further comprising a path router having a table of connections defining topology of the network.

20. (original) The network recited in claim 19 wherein the first node identification is provided by the path router.

21. (original) A method of determining topology of a network, the method comprising:  
determining connection information of a first port of a first node; and

updating a path router with the connection information.

22. (original) The method recited in claim 21 wherein the method of determining connection information of the first port of the first node comprises receiving, at the first port of the first node, identification signal from a second node.

23. (original) The method recited in claim 21 wherein the first node is identified using a node identification provided by the path router.

24. (original) A method of discovering an optical interconnect path, the method comprising:

    sending, from a first port of a first node, a first identification of the first node; and

    receiving, at a first port of a second node, the first identification of the first node wherein the interconnect path is the path between the first port of the first node and the first port of the second node.

25. (original) The method recited in claim 24 further comprising:

    sending, from the first port of the second node, a second node identification; and

    receiving, from the first port of the first node, the second node identification of the second node.

26. (original) The method recited in claim 25 further comprising storing, at the second node, the interconnect path.

27. (original) The method recited in claim 25 further comprising reporting the interconnect path to a third node.

28. (original) The method recited in claim 25 further comprising reporting the interconnect path to a path router.